



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/519,180

08/18/2005

Don W. Cochran

PSSZ 200074US

5253

27885

7590

08/13/2009

Fay Sharpe LLP

1228 Euclid Avenue, 5th Floor

The Halle Building

Cleveland, OH 44115

EXAMINER

LUU, THANH X

ART UNIT

PAPER NUMBER

2878

MAIL DATE

DELIVERY MODE

08/13/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/519,180	<b>Applicant(s)</b> COCHRAN ET AL.	
	<b>Examiner</b> Thanh X. Luu	<b>Art Unit</b> 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4,7,9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,7,11-14,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 4,9,15 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 17, 2009 has been entered. Claims 1-4, 7, 9 and 11-18 are currently pending.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claims 1 and 13, "the part under inspection" lacks proper antecedent basis.

6. Regarding claim 12, "the object under test" lacks proper antecedent basis.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United

Art Unit: 2878

States.

8. Claims 1-3, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiang (U.S. Patent 6,191,850).

9. Regarding claims 1-3, 12 and 13, Chiang discloses (Figs.) a system for providing patterned illumination fields within an automated visual inspection system, the system comprising: a patterned illuminator comprising light emitting diodes (col. 1, lines 17-18) and at least one masking or blocking element (grid pattern 22) configured to provide spatially-adjacent regions of uniform, diffuse lighting and lighting voids (shadows) to produce engineered illumination fields; a receiver aperture (54) positioned to receive light generated by the patterned illuminator which has scattered or reflected off a part under inspection (44); and a transport mechanism (col. 5, line 66 - col. 6, line 3) used to automatically convey and position parts under inspection within the engineered illumination fields generated by the patterned illuminator. Chiang also discloses (Fig. 3) annular regions; a 2D camera (50); and a processor means (57) as claimed. MPEP Sect. 2115 states that material or article worked upon does not limit apparatus claims. Therefore, since the same structure of the system is disclosed the claim is disclosed by the prior art. The type of part under inspection has no patentable weight on the apparatus that performs the inspection.

10. Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Cochran et al. (U.S. Patent 4,882,498), hereinafter, Cochran '498.

11. Regarding claim 16, Cochran '498 disclose (Figs.) a method and a system for providing illuminated fields within an automated visual inspection system, comprising: a patterned illuminator (10) configured to provide spatially-adjacent regions of uniform, diffuse lighting and lighting voids (areas where LEDs are missing) to produce engineered illumination fields; a receiver aperture (lens of a camera 36) positioned to receive light generated by the patterned illuminator which has scattered or reflected off a part under inspection (20); and a transport

Art Unit: 2878

mechanism (conveyor) used to automatically convey and position parts under inspection within the engineered illumination fields generated by the patterned illuminator. Cochran '498 also disclose (Figs.) the illuminator comprises a series of ring lights (Fig. 3) having different dimensions as claimed. MPEP Sect. 2115 states that material or article worked upon does not limit apparatus claims. Therefore, since the same structure of the system is disclosed the claim is disclosed by the prior art. The type of part under inspection has no patentable weight on the apparatus that performs the inspection.

12. Regarding claim 17, as applied above, Cochran '498 discloses the method as claimed. Further, the objects of Cochran '498 (Fig. 2) are three-dimensional and specular.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang in view of Jusoh et al. (U.S. Patent 6,207,946).

15. Regarding claim 7, Chiang discloses the claimed invention as set forth above. Chiang does not disclose pulsing or turning on/off the light source as claimed. However, Jusoh et al. teach (col. 7, lines 20-35) a similar system having strobing LEDs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide strobing LEDs in the apparatus and method of Chiang to improve inspection throughput as known.

16. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over White (U.S. Patent 6,273,338), hereinafter, White '338 in view of White (U.S. Patent 5,684,530), hereinafter, White '530.

Art Unit: 2878

17. Regarding claim 14, White '338 discloses (Figs. 13, 14) a method of illuminating a part under inspection within an automated visual inspection system, the method comprising steps of: positioning a highly specular, three-dimensional part under inspection (2) relative to a patterned illuminator comprising light emitting diodes (LEDs 28) and at least one masking or blocking element (32) wherein illumination fields of the illuminator are selectively activated in an alternating on/off manner (strobed; col. 5, lines 19-20) to produce an engineered illumination pattern; illuminating the part under inspection using the engineered illumination pattern produced by the patterned illuminator; and analyzing light (with processor) generated by the patterned illuminator that has subsequently reflected or scattered off the part under inspection for the purpose of deducing quality status information related to the part. White '338 does not disclose transporting the part. White '530 teaches (Figs.) transporting a part under inspection with a conveyor. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to transport the part as taught in the method of White '338 in view of White '530 to provide automatic inspection as known.

#### ***Allowable Subject Matter***

18. Claims 4, 9, 15 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

19. Applicant's arguments filed July 17, 2009 have been fully considered but they are not persuasive. Since Applicant failed to address the prior art rejection, Applicant's arguments are not persuasive.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner

Art Unit: 2878

should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thanh X Luu/  
Primary Examiner, Art Unit 2878